

WHAT IS CLAIMED:

- 5 1. A keypad for entering letters, comprising:
an array of keys with each key being assigned to at least one letter of an
alphabetical system based on the frequency of occurrence of the least one letter in a typical
body of written work, wherein the alphabetical system comprises at least one most-
frequently-occurring letter that is entered by more than one key activation associated with the
same key and at least one less-frequently-occurring letter that is entered by at least one key
activation associated with each of at least two different keys.
- 10 2. The key-pad of claim 1, wherein each key is a soft-keys presented to a user on a
display device in accordance with a program executed on a device processor.
- 15 3. The keypad of claim 1, wherein the more than one key activation at the same key
requires at least one touching and at least one un-touching of a touch-sensitive surface at
substantially the same location, and wherein the at least one key activation at each of at least
two different keys requires touching the touch-sensitive surface at a first location and un-
touching the touch sensitive surface at a second location that is different from the first
location.
4. The keypad of claim 1, wherein one or more letters are assigned to each key in
accordance with a position array having defined position elements.
- 20 5. The keypad of claim 4, wherein the position elements include a central position and at
least one peripheral position that point to an adjacent key.
6. The keypad of claim 5, wherein a most-frequently-occurring letter is assigned to the
central position and a less-frequently-occurring letter is assigned to the peripheral position.
- 25 7. The keypad of claim 6, wherein a less-frequently-occurring letter is entered by a two-
key sequence that requires first activating a key assigned to the less-frequently-occurring
letter and then activating the key to which the position element of the less-frequently-
occurring letter points to.
8. The keypad of claim 7, wherein one or more non-letter symbols or characters are
assigned to each key in accordance with position elements of the position array, wherein a

non-letter symbol or character is entered by a two-key sequence that requires first activating the key assigned to a non-letter symbol or character and then activating the key to which the position element of the non-letter symbol or character points to.

9. The keypad of claim 1, wherein a wrap-around extension points to a non-adjacent key, if a peripheral position points to no adjacent key.

10. The keypad of claim 1, wherein a key activation includes touching of substantially the same or different locations of a surface or un-touching of substantially the same or different locations of the surface.

11. A keypad system comprising:

- (a) an array of keys with each key being assigned to at least one letter in an alphabetical system;
- (b) a detector that detects activation at a key; and
- (c) a signal generator that generates a character signal corresponding to a selected letter in accordance with a key sequence, wherein for a most-frequently-occurring letter, the key sequence requires two key activations at the same key, and for a less-frequently-occurring letter the key sequence requires key activation at two different keys.

12. The keypad system of claim 11, wherein most-frequently-occurring letters are assigned, at most, to each one of all of the keys within the key array, and less-frequently-occurring letters are assigned in accordance with at least one element of a position array.

13. The keypad system of claim 12, wherein at least one least-frequently-occurring letter is assigned in accordance with at least one element of the position array.

14. The keypad system of claim 13, wherein the array of keys comprises M rows and N columns and the number of letters in the alphabetical system is equal to L.

15. The keypad system of claim 14, wherein $M=N=3$ and $L=26$.

16. The keypad system of claim 14, wherein $M=4$ and $N=3$, and wherein one of the keys that is not assigned to a letter is used for selecting an alphanumeric operating mode of the keypad system.

17. The keypad of claim 11, wherein each key is a soft-key presented to a user on a display device in accordance with a program executed on a device processor.

18. The keypad system of claim 11, wherein a key activation includes touching of substantially the same or different locations of a surface or un-touching of substantially the same or different locations of the surface.

19. An information entry method for a keypad, comprising:

(a) determining the frequency of occurrences of letters in a typical body of written work that is based on an alphabetical system;

(b) assigning letters to an array of keys based on the frequency of occurrence of the letter;

(c) activating at least one of the keys in accordance with a key sequence that corresponds to a selected letter, wherein for a most-frequently-occurring letter, the key sequence requires multiple activation of the same key, and for a less-frequently-occurring letter the key sequence requires activation of two different keys; and

(d) generating a character signal corresponding to the selected letter in response to the key sequence.

20. The method of claim 19, wherein a key activation includes touching of substantially the same or different locations of a surface or un-touching of substantially the same or different locations of the surface.

21. The method claim 19, wherein each key is a soft-key presented to a user on a display device in accordance with a program executed on a device processor.

22. A keypad for entering english letters, comprising:

- (a) an array of nine keys numbered key 1 through key 9, wherein
- key 1 is assigned to letter A;
 - key 2 is assigned to letter N;
 - key 3 is assigned to letter I;
 - key 4 is assigned to letter H;
 - key 5 is assigned to letter O;
 - key 6 is assigned to letter R;
 - key 7 is assigned to letter T;
 - key 8 is assigned to letter E; and
 - key 9 is assigned to letter S.

23. The keypad of claim 19, wherein letters V, L, X, K, M, Y, W, and F are further assigned to keys 1, 2, 3, 4, 6, 7, 8, 9, respectively.

24. The keypad of claim 19, wherein letters Q, U, P, C, B, G, D, and J are further assigned to key 5.

25. A keypad for entering data symbols, comprising:

an array of keys having at least one key assigned to a data symbol in accordance with a position array that has defined position elements, including at least one peripheral position that point to a non-adjacent key, wherein at least one data symbol is entered by key activation of a key and a non-adjacent key that is pointed to by a peripheral position of the key.

26. The keypad of claim 25, wherein the non-adjacent key is a key that is specified by a wrap-around position of the array of keys.

27. The method claim 25, wherein each key is a soft-keys presented to a user on a display device in accordance with a program executed on a device processor.

28. The method of claim 25, wherein a key activation includes touching of substantially the same or different locations of a surface or un-touching of substantially the same or different locations of the surface.

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